

# Package ‘InsuSensCalc’

January 20, 2025

**Title** Insulin Sensitivity Indices Calculator

**Version** 0.0.1

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**Description** It facilitates the calculation of 40 different insulin sensitivity indices based on fasting, oral glucose tolerance test (OGTT), lipid (adipose), and tracer (palmitate and glycerol rate) and dxa (fat mass) measurement values. It enables easy and accurate assessment of insulin sensitivity, critical for understanding and managing metabolic disorders like diabetes and obesity. Indices calculated are described in Gastaldelli (2022). <doi:10.1002/oby.23503> and Lorenzo (2010). <doi:10.1210/jc.2010-1144>.

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**Encoding** UTF-8

**RoxygenNote** 7.2.3

**LazyData** true

**Imports** dplyr, tibble, magrittr, tidyr

**Suggests** knitr, rmarkdown, testthat

**VignetteBuilder** knitr

**Depends** R (>= 3.5.0)

**URL** <https://github.com/sufyansuleman/InsuSensCalc>

**BugReports** <https://github.com/sufyansuleman/InsuSensCalc/issues>

**NeedsCompilation** no

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**Repository** CRAN

**Date/Publication** 2024-04-04 12:03:01 UTC

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 example\_data

*Example Dataset*


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### Description

Names, description and units (where needed) of the variables. Name of the variables in the input data should be the same as the ones listed below for accurately calculating the indices. Otherwise it will result in Error. If a variable is missing for the category it will not calculate the any of the index for that category. This can be handled by creating the variable column with NA vlaues If the values are missing for a variable it will set the value to NA and calculate the remaining indices and return the NA value for the missing variable.

### Usage

```
example_data
```

### Format

A data frame with rows (number of observations) and 17 columns (variables, can vary for every data):

**age** numeric Age of the individual (years)  
**sex** factor Sex of the individual (1 for male, 2/0 for female)  
**I0** numeric Fasting insulin level (pmol/L)  
**G0** numeric Fasting glucose level (mmol/L)  
**I30** numeric Insulin level at 30 minutes (pmol/L)  
**G30** numeric Glucose level at 30 minutes (mmol/L)  
**I120** numeric Insulin level at 120 minutes (pmol/L)  
**G120** numeric Glucose level at 120 minutes (mmol/L)  
**HDL\_c** numeric HDL cholesterol level (mmol/L)  
**FFA** numeric Free fatty acid level (mmol/L)  
**waist** numeric Waist circumference of the individual (cm)  
**weight** numeric Weight of the individual (kg)  
**bmi** numeric Body mass index of the individual (kg/m<sup>2</sup>)  
**TG** numeric Triacylglycerides level (mmol/L)  
**rate\_palmitate** numeric Rate of palmitate (arbitrary units)  
**rate\_glycerol** numeric Rate of glycerol (arbitrary units)  
**fat\_mass** numeric Fat mass of the individual (kg)

### Source

Data is a simulated dataset for illustrative purposes.

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